

Title (en)  
SIMULTANEOUS NITRIFICATION/DENITRIFICATION (SNDN) IN SEQUENCING BATCH REACTOR APPLICATIONS

Title (de)  
GLEICHZEITIGE NITRIFIKATION/DENITRIFIKATION (SNDN) IN SEQUENZIERUNGSSCHARGENREAKTORANWENDUNGEN

Title (fr)  
NITRIFICATION ET DÉNITRIFICATION SIMULTANÉES (SNDN) DANS DES APPLICATIONS DE RÉACTEUR DISCONTINU SÉQUENTIEL

Publication  
**EP 3681843 A4 20210609 (EN)**

Application  
**EP 18857073 A 20180914**

Priority  
• US 201762558570 P 20170914  
• US 2018050978 W 20180914

Abstract (en)  
[origin: WO2019055721A1] A method of operating a sequencing batch reactor process includes introducing wastewater to be treated into the sequencing batch reactor and subjecting the wastewater to treatment in the sequencing batch reactor in an aerated anoxic mode in which a quantity of oxygen is supplied at a level insufficient to meet a biological oxygen demand of the wastewater, but sufficient to cause simultaneous nitrification and denitrification reactions to occur in the wastewater.

IPC 8 full level  
**C02F 3/12** (2006.01); **C02F 3/30** (2006.01); **C02F 1/52** (2006.01); **C02F 3/20** (2006.01)

CPC (source: EP US)  
**C02F 3/006** (2013.01 - EP US); **C02F 3/1263** (2013.01 - EP US); **C02F 3/301** (2013.01 - EP US); **C02F 3/302** (2013.01 - EP US); **C02F 1/5245** (2013.01 - EP); **C02F 3/208** (2013.01 - EP); **C02F 2209/006** (2013.01 - EP US); **C02F 2209/008** (2013.01 - EP US); **C02F 2209/04** (2013.01 - EP US); **C02F 2209/14** (2013.01 - EP); **C02F 2209/15** (2013.01 - EP); **C02F 2209/22** (2013.01 - EP US); **C02F 2209/44** (2013.01 - EP US); **Y02W 10/10** (2015.05 - EP)

Citation (search report)  
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• [X] WO 2008046139 A1 20080424 - ENVIRONMENTAL BIOTECHNOLOGY CR [AU], et al  
• [X] US 2012085704 A1 20120412 - JENKINS THEODORE K [US], et al  
• [X] HOLAKOO ET AL: "Long term performance of MBR for biological nitrogen removal from synthetic municipal wastewater", CHEMOSPHERE, PERGAMON PRESS, OXFORD, GB, vol. 66, no. 5, 25 November 2006 (2006-11-25), pages 849 - 857, XP005730213, ISSN: 0045-6535, DOI: 10.1016/J.CHEMOSPHERE.2006.06.026  
• [X] XINMIN ZHAN ET AL: "Nitrogen removal from slaughterhouse wastewater in a sequencing batch reactor under controlled low DO conditions", BIOPROCESS AND BIOSYSTEMS ENGINEERING, SPRINGER, BERLIN, DE, vol. 32, no. 5, 14 December 2008 (2008-12-14), pages 607 - 614, XP019741052, ISSN: 1615-7605  
• [A] MA WEIWEI ET AL: "Enhanced nitrogen removal from coal gasification wastewater by simultaneous nitrification and denitrification (SND) in an oxygen-limited aeration sequencing batch biofilm reactor", BIORESOURCE TECHNOLOGY, vol. 244, 25 July 2017 (2017-07-25), AMSTERDAM, NL, pages 84 - 91, XP055798547, ISSN: 0960-8524, DOI: 10.1016/j.biortech.2017.07.083  
• See also references of WO 2019055721A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**WO 2019055721 A1 20190321**; AU 2018331439 A1 20200312; CA 3073534 A1 20190321; EP 3681843 A1 20200722; EP 3681843 A4 20210609; TW 201925104 A 20190701; TW I760562 B 20220411; US 11577978 B2 20230214; US 11827550 B2 20231128; US 2020283315 A1 20200910; US 2023227340 A1 20230720; US 2024059594 A1 20240222; ZA 202001152 B 20231025

DOCDB simple family (application)  
**US 2018050978 W 20180914**; AU 2018331439 A 20180914; CA 3073534 A 20180914; EP 18857073 A 20180914; TW 107132387 A 20180914; US 201816646684 A 20180914; US 202318109263 A 20230214; US 202318382085 A 20231020; ZA 202001152 A 20200224